Enova DVX
All-In-One Presentation Switchers

Complete Controller, Matrix Switcher, Scaler, Audio Processor and Amplifier Solution for Small to Large Conference Rooms, Classrooms, and Auditoriums

As analog fades into the sunset and the AV industry moves to all digital, integrators desperately need a cost effective room solution that eases the transition from analog to digital, supports HDCP, and is easy to scale, configure and install. Competitive solutions use time-consuming, cumbersome work-around tools to deal with HDCP, deliver less than optimal video to every display and output sub-par audio - resulting in an inordinate amount of wasted time on quality and maintenance issues. How do you solve this problem? By shattering old AV system design methodologies and creating an all-in-one game changing solution that replaces the need for numerous individual components and equipment. Through consolidating everything into a single box, AMX has dramatically improved product performance, simplified installation and maintenance, and reduced the overall footprint to a single 3U chassis.

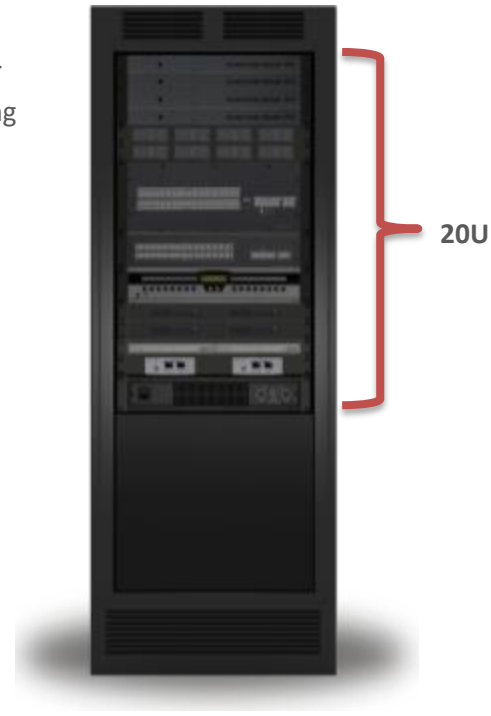
INTRODUCTION

Even in today's digital world, the majority of classrooms, conference rooms and auditoriums still have some legacy analog devices. Creating a solution that supports both analog and digital has led to integrators building large cumbersome solutions that are difficult to configure and time consuming to install and maintain. To further complicate the installation, unlike the analog world, digital is not simple. Integrators have to worry about HDMI problems related to distance, switching lags, HDCP authentication, HDCP keys constraints and more.

Successfully integrating analog and digital AV and dealing with HDCP issues are only a fraction of the potential design and installation problems. Integrators also need to make sure room audio is crisp, video is crystal clear and the solution has enough flexibility for future connection needs. And unlike previous AV solutions placed in corners and overflowing into ceilings, walls and usable space, AV solutions are now expected to fit into the tight confines of a lectern or credenza within the room.

Through innovative engineering, AMX has designed the only All-In-One Presentation Switcher family that seamlessly handles both analog and digital AV, makes HDCP as easy to install as analog and delivers picture perfect video and pristine audio – all in a single 3U box. Designed to meet the needs of virtually any classroom, conference room or auditorium, the Enova DVX is poised to change the future of AV room solutions.

- Central Controller
- RGB to HDMI Scaler
- Audio de-embedding
- Video Switching
- Audio Switching
- Audio DSP
- Audio embedding
- HDMI Splitter
- AV Cat5 Output
- Amplifier



OVERVIEW

The Enova DVX is an all-in-one controller, AV switcher, scaler, analog to digital signal converter, twisted pair transmitter and amplifier with built-in professional grade audio processing. The compact 3U Presentation Switcher replaces the need for numerous individual components and eliminates the integration challenges that accompany them. With AMX exclusive features, the DVX is a simple to install, flexible solution, perfectly suited for most conference rooms, classrooms and auditoriums.

The DVX comes in a variety of port configurations, making them ideal for any conference room or classroom application.

KEY FEATURES

- **All-In-One Presentation Switcher** – Simplifies installation and maintenance by combining all necessary AV components into one compact unit
- **InstaGate Pro™ Technology –** Eliminates HDCP key constraints and HDCP switching delays
- **SmartScale® Technology –** Ensures best resolution on every display in mixed resolution applications
- **Multi-Format Inputs –** Supports analog and digital signals on a single connector
- **Audio Breakaway and Embedding** – Allows audio and video signals from one source to be switched to different destinations
- **Twisted Pair Distribution** - Send audio, video, bi-directional control and Ethernet up to 100m
- **Integrated Digital Signal Processor –** Easily adjust audio to match the room's unique acoustics
- **Microphone Processing –** Eliminates amplification of unwanted noises ensuring crystal clear communication
- **Automatic Standby Mode -** Power-down all audio and video circuitry when not in use
- **Web GUI for Audio and Video Configuration -** Point and click GUI simplifies setup and installation

ALL-IN-ONE PRESENTATION SWITCHER

The average mid-size AV installation consists of 8+ devices - controller, audio switcher, video switcher video scaler, twisted pair transmitter, audio digital signal processor, microphone mixer and amplifier. Not only can installing a system of this size be an unwieldy task for the installer, but programming it can be arduous. With an average programming time of 55+ hours (each device needs to be set up individually and then programmed to work with the rest of the system), standardizing on a system like this is nearly impossible.

The All-In-One Enova DVX Presentation Switcher solves this problem by integrating all of the typical standalone devices into a single chassis. By eliminating the dozens of interconnections between multiple boxes, installation and troubleshooting is greatly simplified. Plus, with fewer cables and components this means fewer points of failure. With embedded firmware dedicated to making sure all of the components work together flawlessly and a point and click Web GUI to easily customize settings, the DVX dramatically reduces installation time from weeks to hours.

By consolidating several components into a single chassis, the DVX is also able to reduce energy costs. A DVX consumes roughly 90 watts of energy when operational versus 400 to 500 watts for a traditional AV installation.

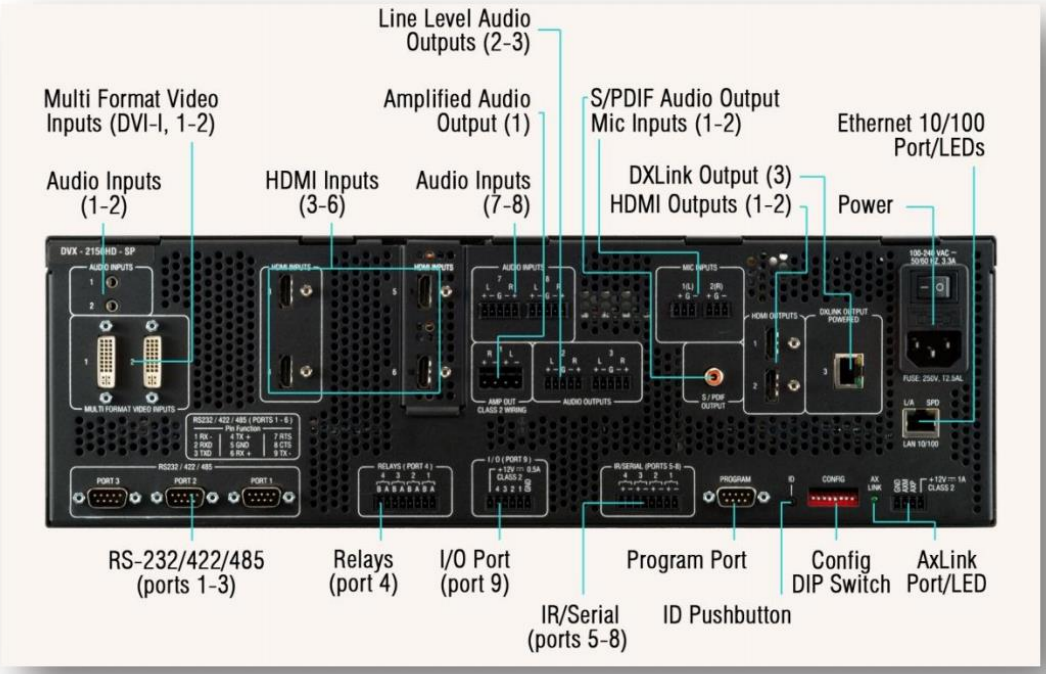
Aesthetically speaking, the DVX reduces rack space requirements from 20U to 3U, freeing up valuable rack space and allowing the entire solution to be housed in unique storage environments like a credenza or lectern. The result for the end user is a flexible solution they can standardize on across their infrastructure and know that it is appropriately sized to match the needs of any room.

ENOVA DVX MODELS

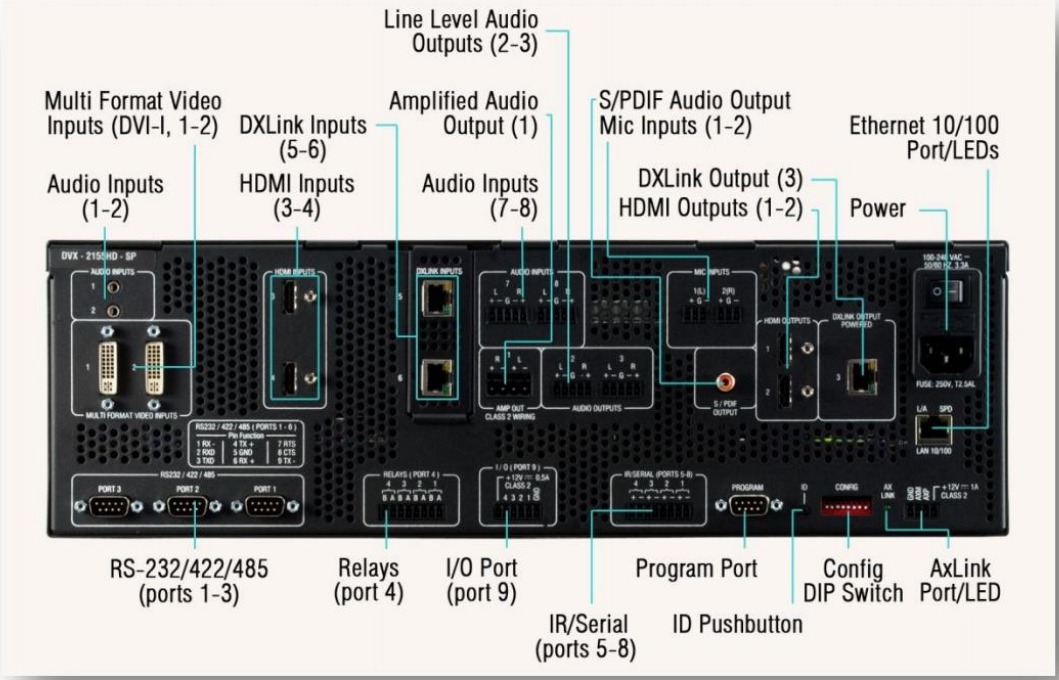
The Enova DVX family includes the following sizes and configurations. For all models, the **SP** designation implies a 2x25w – 8 Ohm amplifier, while the **T** designation implies a 75w – 70/100V amplifier. Please refer to the chart on the last page of this Product Brief for additional details.

Model	Switcher Size	Configuration & Applications
DVX 2150HD-SP and -T	6x3	Includes 4 HDMI inputs, 2 Multi-Format inputs, no DXLink inputs. Perfect for small to mid-size conference rooms and classrooms.
DVX 2155HD-SP and -T	6x3	Includes 2 HDMI inputs, 2 Multi-Format inputs, 2 DXLink inputs. Perfect for small to mid-size conference rooms and classrooms requiring distance transport.
DVX 3150HD-SP and -T	10x4	Includes 6 HDMI inputs, 4 Multi-Format inputs, no DXLink inputs. Perfect for mid-size to large conference rooms, boardrooms and classrooms.
DVX 3155HD-SP and -T	10x4	Includes 4 HDMI inputs, 4 Multi-Format inputs, 2 DXLink inputs. Perfect for mid-size to large conference rooms, boardrooms and classrooms requiring distance transport.
DVX 3156HD-SP and -T	10x4	Includes 4 HDMI inputs, 2 Multi-Format inputs, 4 DXLink inputs; Ideal for dual room and flexible facility applications

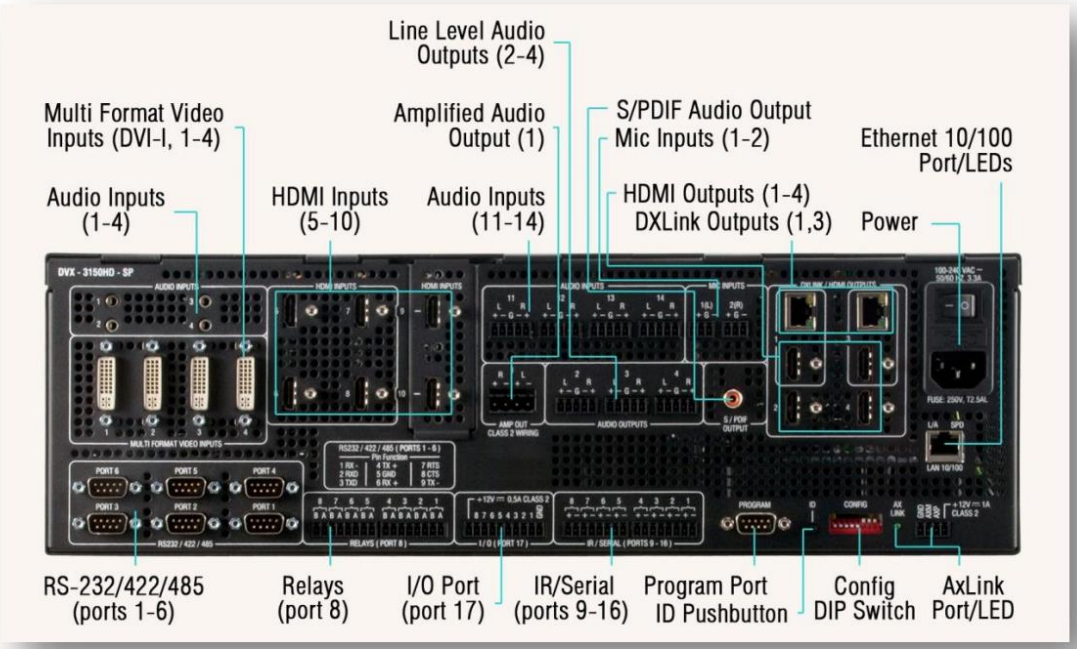
Enova DVX-2150HD



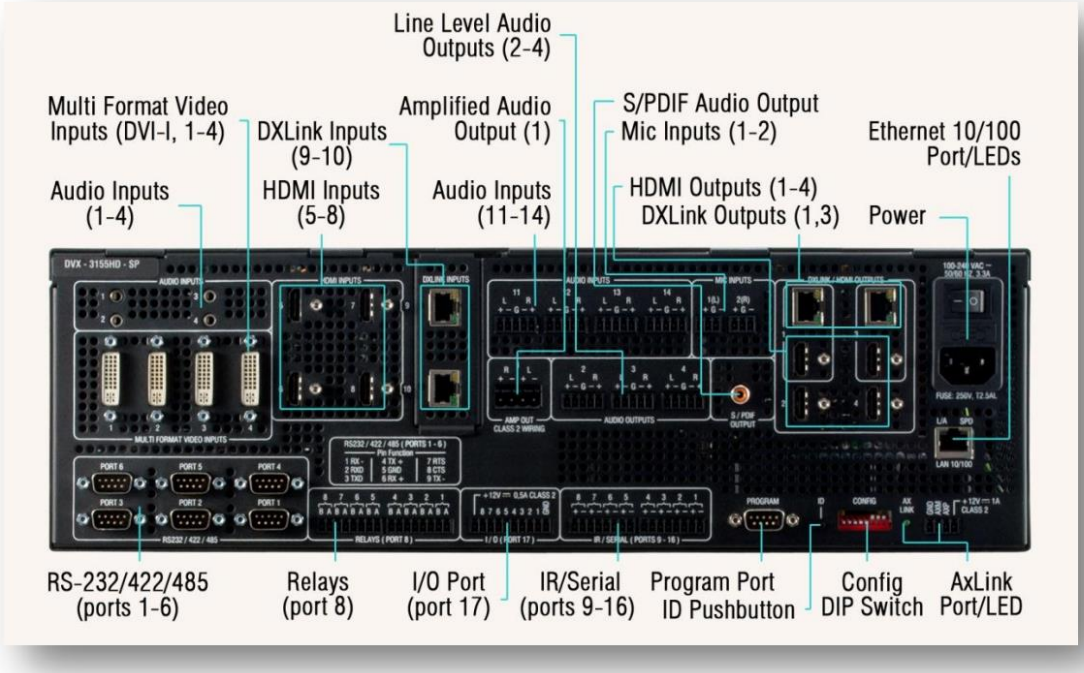
Enova DVX-2155HD



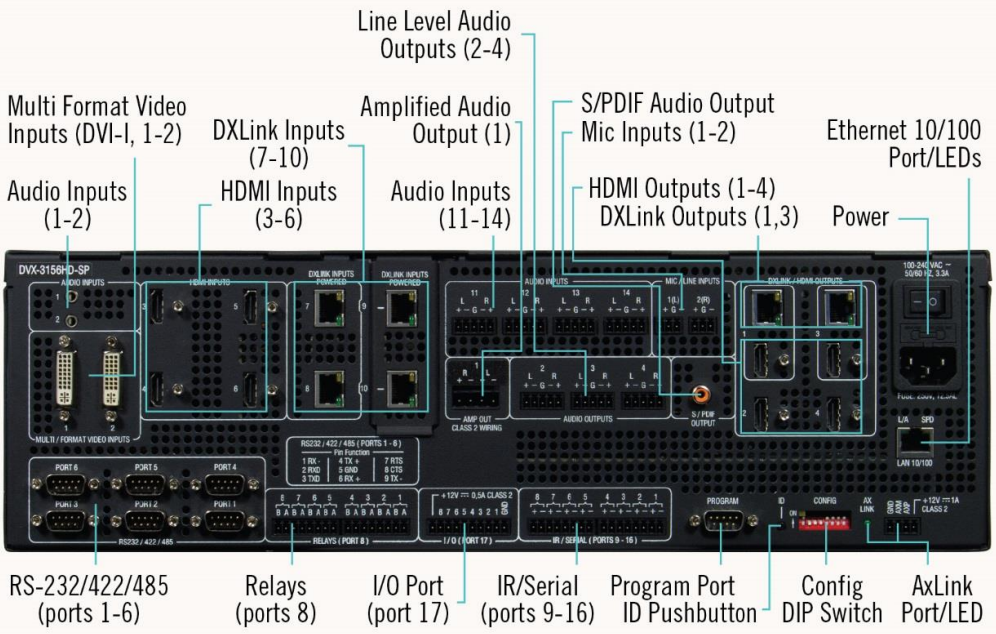
Enova DVX-3150HD



Enova DVX-3155HD



Enova DVX-3156HD



INSTAGATE PRO™ TECHNOLOGY

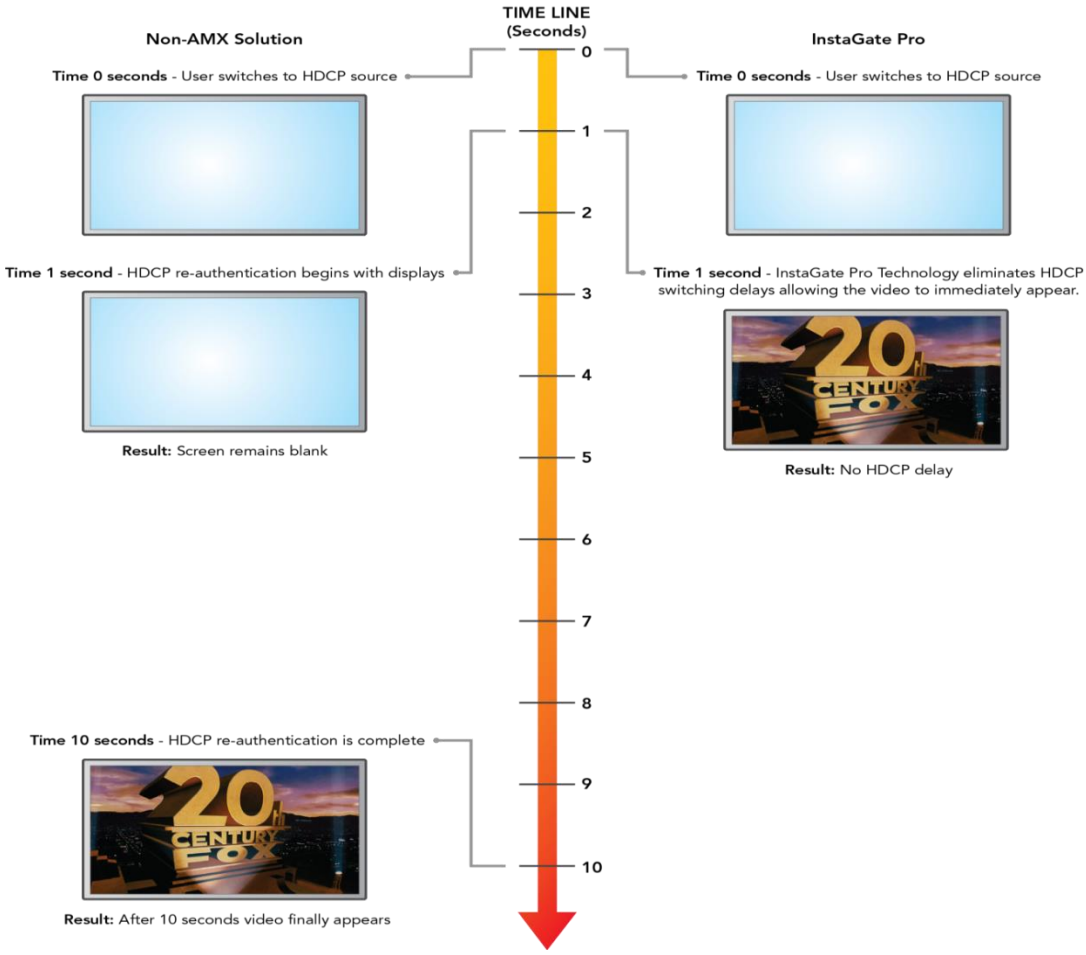
HDMI promised to simplify cabling and provide consumers with the highest quality AV experience. However, the issues caused by HDCP switching delays and key overruns have made the installation of traditional HDMI signal distribution systems challenging and often unusable.

PROBLEM – HDCP SWITCHING DELAYS

HDCP switching delays traditionally occur when a new destination is added to a source (via a new switching combination) through the matrix switcher. Because the source must ensure that all connected downstream devices are HDCP compliant, when a new destination is connected, the source must effectively "mute" the video by blanking until authentication is complete. This process can take several seconds per connected display and longer when several displays are connected.

AMX SOLUTION – INSTAGATE PRO ELIMINATES HDCP SWITCHING DELAYS

With InstaGate Pro, the Enova DVX addresses HDCP authentication as soon as a source and destination are plugged in. Consequently, there is zero HDCP delay or blanking during the switching process.

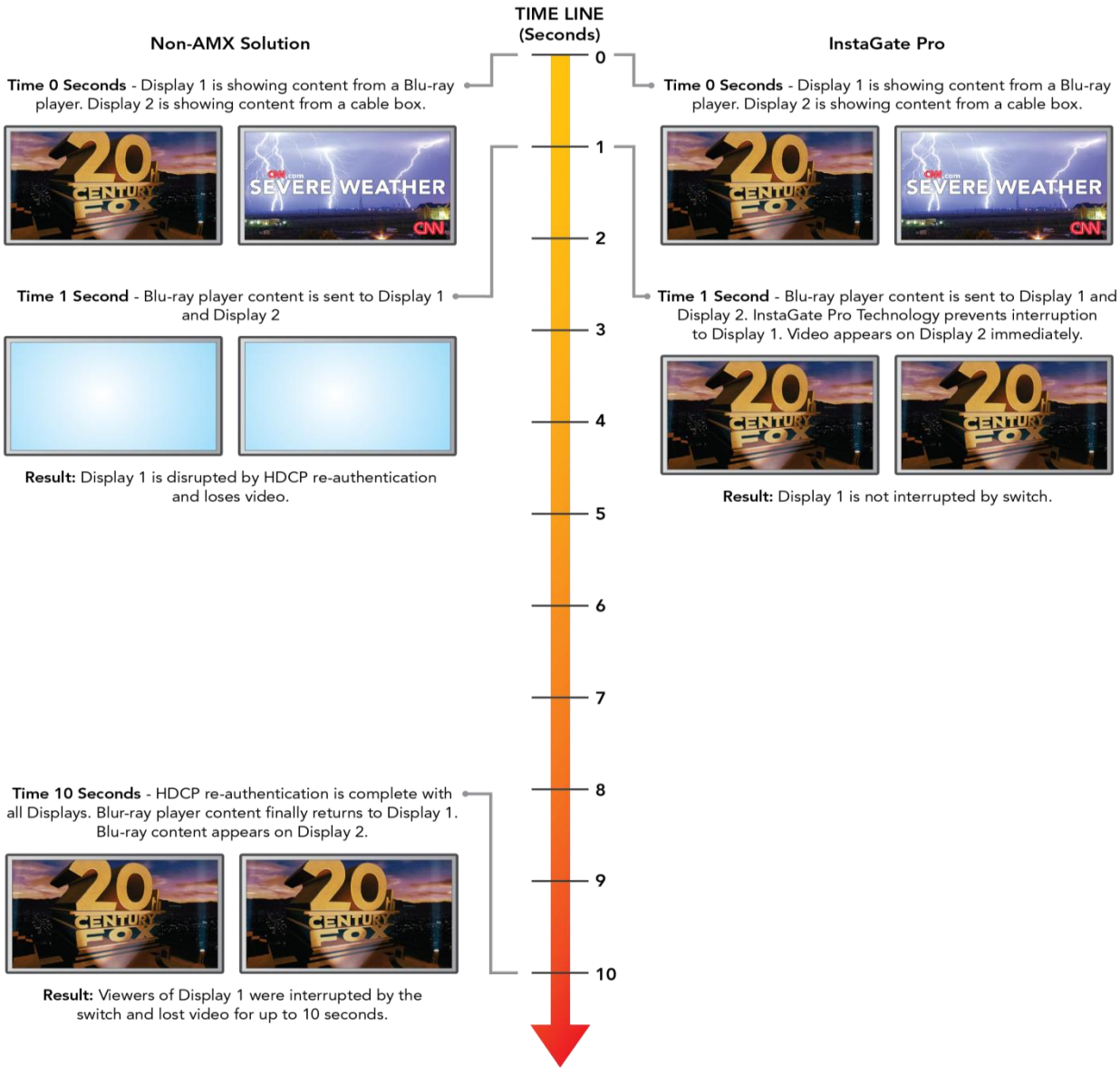


PROBLEM - HDCP VIEWING DISTRUPTIONS

Video blanking can really become an issue when a source is already present on one display and then switched to an additional display. When the new display is added, the original output (which was showing video previously) appears to shut off as the source initiates its authentication process for the combination of the two displays.

AMX SOLUTION – INSTAGATE PRO ELIMINATES HDCP VIEWING DISRUPTIONS

With AMX's InstaGate Pro, switches are executed effectively while retaining video from the source even when adding a new output to that same source. This results is users getting video from the source they want, without delays and interruptions to other displays already showing video from the same source.


TIME LINE
(Seconds)
Non-AMX Solution
InstaGate Pro
Time 0 Seconds - Display 1 is showing content from a Blu-ray player. Display 2 is showing content from a cable box.
Time 0 Seconds - Display 1 is showing content from a Blu-ray player. Display 2 is showing content from a cable box.
SEVERE WEATHER
Time 1 Second - Blu-ray player content is sent to Display 1 and Display 2
Time 1 Second - Blu-ray player content is sent to Display 1 and Display 2. InstaGate Pro Technology prevents interruption to Display 1. Video appears on Display 2 immediately.
Result: Display 1 is disrupted by HDCP re-authentication and loses video.
Result: Display 1 is not interrupted by switch.
Time 10 Seconds - HDCP re-authentication is complete with all Displays. Blur-ray player content finally returns to Display 1. Blu-ray content appears on Display 2.
Result: Viewers of Display 1 were interrupted by the switch and lost video for up to 10 seconds.
0
1
2
3
4
5
6
7
8
9
10

PROBLEM –HDCP KEY OVERRUNS AUTOMATICALLY SHUTDOWN SOURCE DEVICE

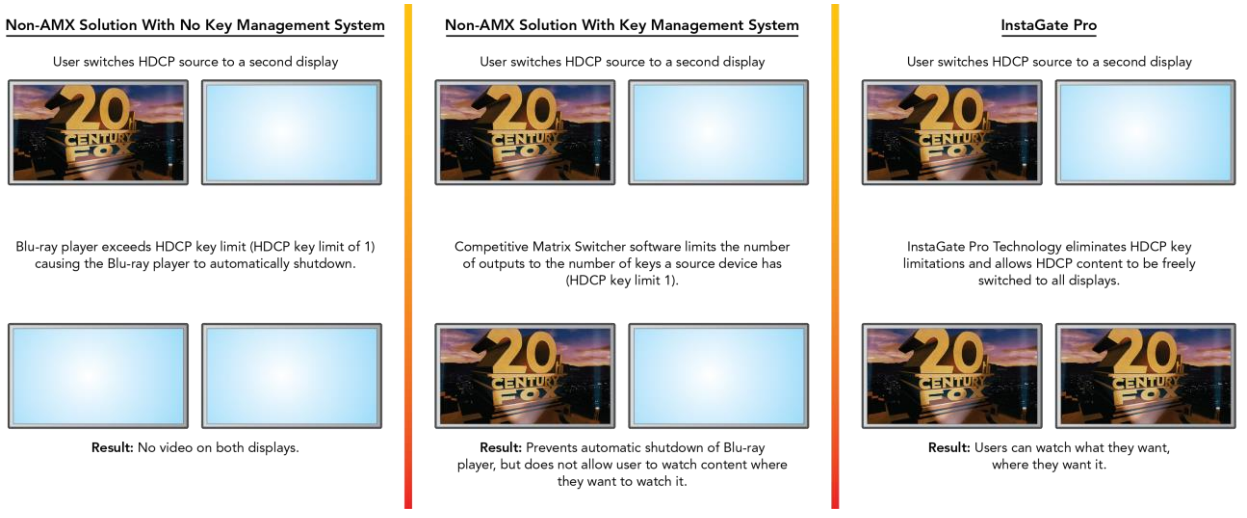
HDMI/HDCP authentication requires sources to validate downstream display keys to ensure that all destinations are HDCP compliant. However, there is no requirement specifying how many of those device keys a source manufacturer must support. As a result, varying HDMI/HDCP sources support a range of downstream keys. Even within a single manufacturer's product line, key support numbers vary and are rarely provided in product documentation. This unknown key support limit is generally only discovered once it is exceeded and the source device simply shuts itself off.

NON-AMX SOLUTIONS - PREVENT USERS FROM WATCHING VIDEO EVERYWHERE THEY WANT

Overcoming key overruns has traditionally been dealt with via a set of tools or system design considerations, which limit the number of outputs a source can be switched to. Some sources support a single key, which limits a matrix switcher to switch to only a single output at a time. When a user wants to switch to more than one output or all outputs, this becomes an issue.

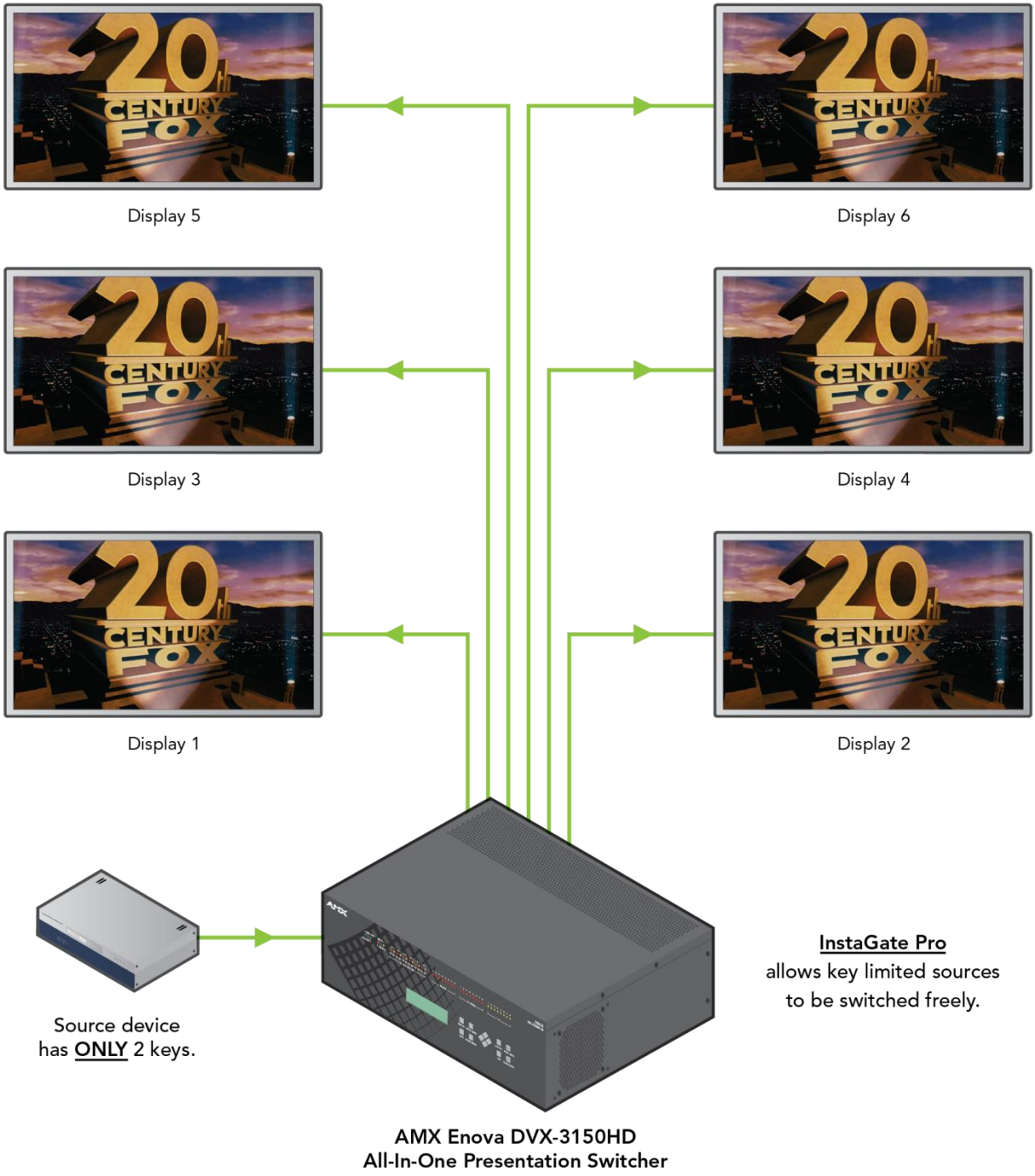
AMX SOLUTION – INSTAGATE PRO ELIMINATES HDCP KEY OVERRUNS

With InstaGate Pro, the entire HDCP negotiation process is handled within the matrix switching system. Validation of each output is completed without concern for source key limitations. As long as a source can handle a single key, it can be sent to any or all 6 outputs as long as those displays are HDCP compliant. This process is handled without additional tools or programming. Simply plug in compliant sources and destinations and begin switching. In addition, because every output is being validated for HDCP compliance individually, switching an HDCP source to a non-compliant display won't negatively affect compliant displays showing video from the same source. The non-compliant display simply receives a visual indication (solid red screen) that it is not receiving video, while all compliant displays continue to show video without issue.


Non-AMX Solution With No Key Management System
User switches HDCP source to a second display
Blu-ray player exceeds HDCP key limit (HDCP key limit of 1) causing the Blu-ray player to automatically shutdown.
Result: No video on both displays.
Non-AMX Solution With Key Management System
User switches HDCP source to a second display
Competitive Matrix Switcher software limits the number of outputs to the number of keys a source device has (HDCP key limit 1).
Result: Prevents automatic shutdown of Blu-ray player, but does not allow user to watch content where they want to watch it.
InstaGate Pro
User switches HDCP source to a second display
InstaGate Pro Technology eliminates HDCP key limitations and allows HDCP content to be freely switched to all displays.
Result: Users can watch what they want, where they want it.

AMX SOLUTION - INSTAGATE PRO ALLOWS USERS TO WATCH VIDEO EVERYWHERE THEY WANT

While there are a wide range of switchers from the least to most expensive, Enova Matrix Switchers with InstaGate Pro are the only matrix switchers that distribute HDMI/HDCP signals easily, straightforwardly and painlessly without constraints, limits or hassles.



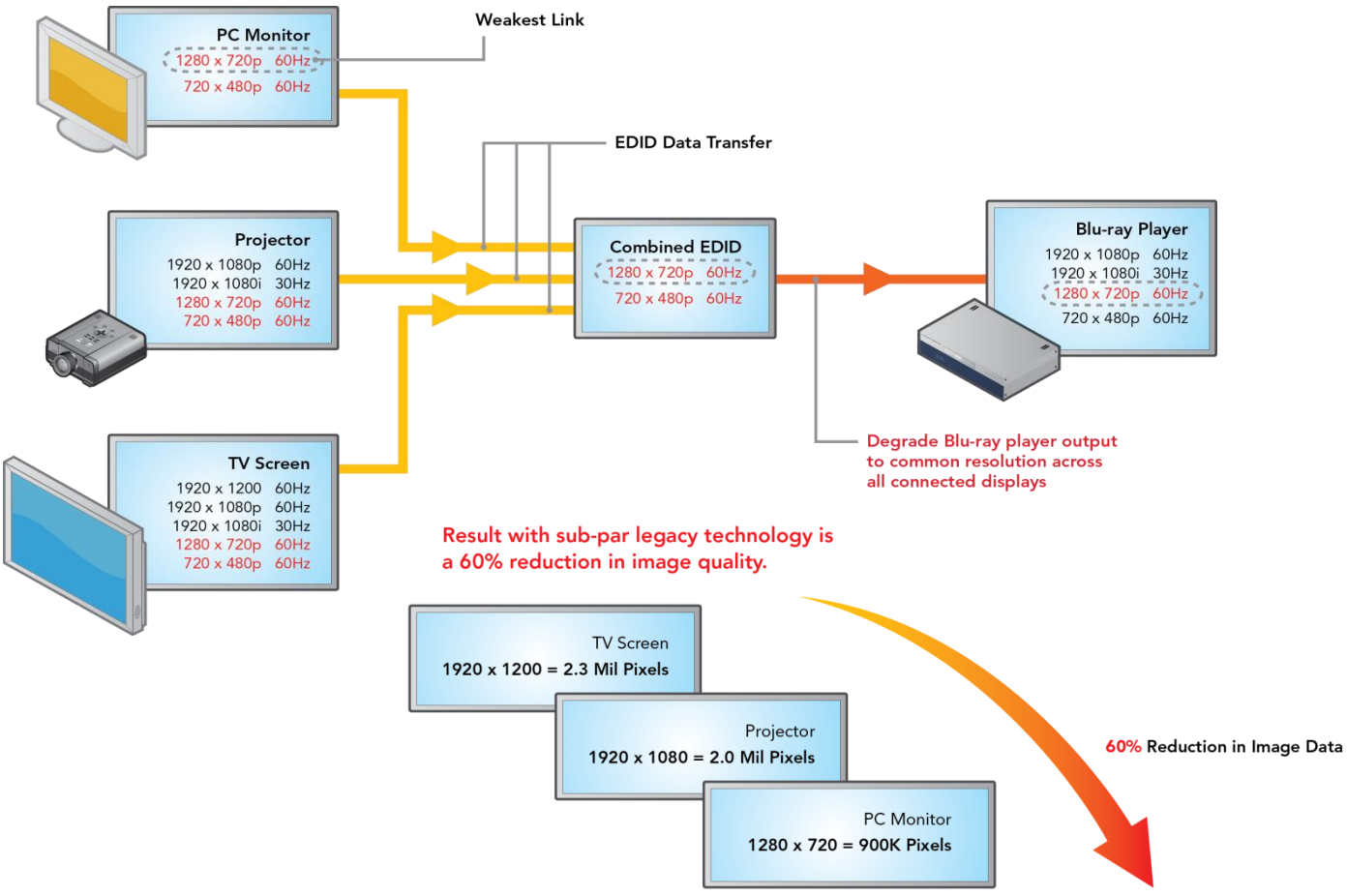
SMARTSCALE® TECHNOLOGY

PROBLEM – MIXED RESOLUTIONS CREATE INSTALLATION CHALLENGES AND POOR VIDEO QUALITY

Designing matrix switching solutions for distribution of HDMI/HDCP and other mixed analog sources can be challenging due to the large number of source and destination resolutions within the system. In a matrix switching environment, each source can only output one resolution at a time. Incompatibilities in the system can arise when the output resolution of the source is not supported by some or all displays in the system. This problem is often overlooked in the design process, forcing installers to purchase costly scalers to overcome the issue.

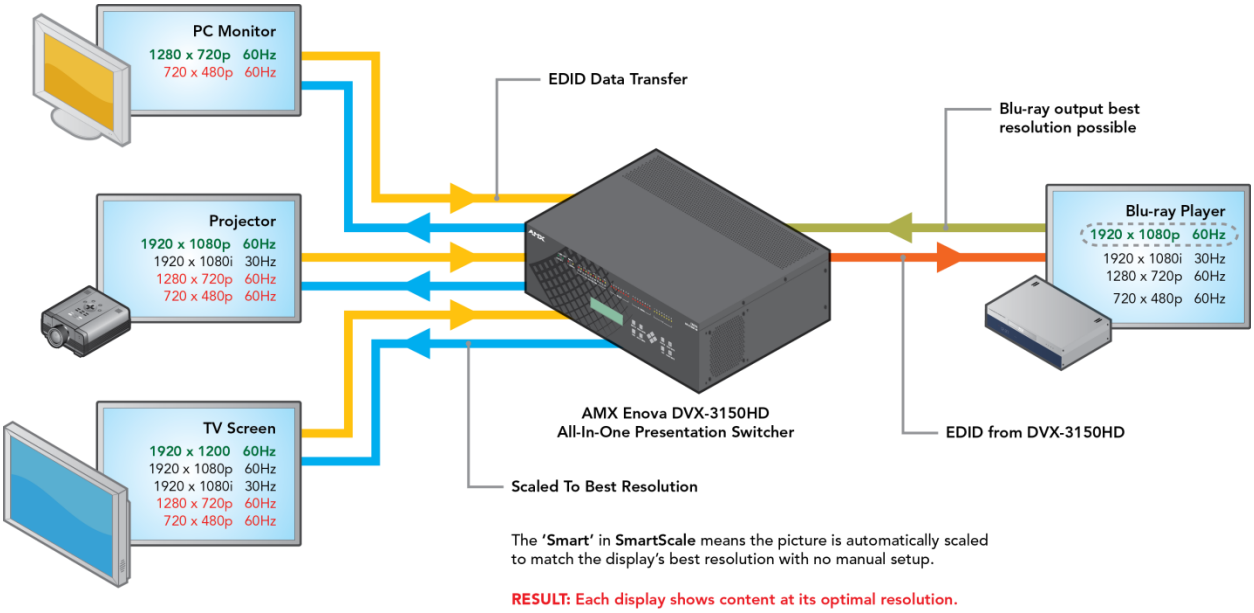
NON-AMX SOLUTION - DEFAULT TO THE WEAKEST LINK

As a solution, some matrix switchers actively evaluate the EDID files within the connected displays and present a combined EDID set. Since this process just defines a common resolution between all connected displays, the highest resolution presented to the entire system will be from the lowest resolution display. This is often times referred to as best common or greatest common resolution (also known as weakest link). In most cases, it means every source is being forced down to a lower resolution, meaning poorer image quality and an overall inferior distribution system. Oftentimes, expensive 1080p displays are being degraded to standard definition resolutions.


PC Monitor
1280 x 720p 60Hz
720 x 480p 60Hz
Weakest Link
EDID Data Transfer
Projector
1920 x 1080p 60Hz
1920 x 1080i 30Hz
1280 x 720p 60Hz
720 x 480p 60Hz
Combined EDID
1280 x 720p 60Hz
720 x 480p 60Hz
Blu-ray Player
1920 x 1080p 60Hz
1920 x 1080i 30Hz
1280 x 720p 60Hz
720 x 480p 60Hz
TV Screen
1920 x 1200 60Hz
1920 x 1080p 60Hz
1920 x 1080i 30Hz
1280 x 720p 60Hz
720 x 480p 60Hz
Degrade Blu-ray player output to common resolution across all connected displays
Result with sub-par legacy technology is a 60% reduction in image quality.
TV Screen
1920 x 1200 = 2.3 Mil Pixels
Projector
1920 x 1080 = 2.0 Mil Pixels
PC Monitor
1280 x 720 = 900K Pixels
60% Reduction in Image Data

AMX SOLUTION – SMARTSCALE TECHNOLOGY GUARANTEES EVERY PICTURE LOOKS ITS BEST

AMX solves this problem using SmartScale Technology on every output. SmartScale automatically responds to the display's declared EDID information and delivers a custom-scaled image, based not only on the preferred resolution but also additional information such as horizontal and vertical pixel count, detailed timing, color space chromaticity and more. No other manufacturer provides automatic video resolution support at this detailed level. SmartScale eliminates the incompatibilities between sources and displays operating at different resolutions by accepting the highest resolution of every source device, ensuring every display operates at its preferred resolution. SmartScale guarantees every picture looks its best with no manual adjustments.

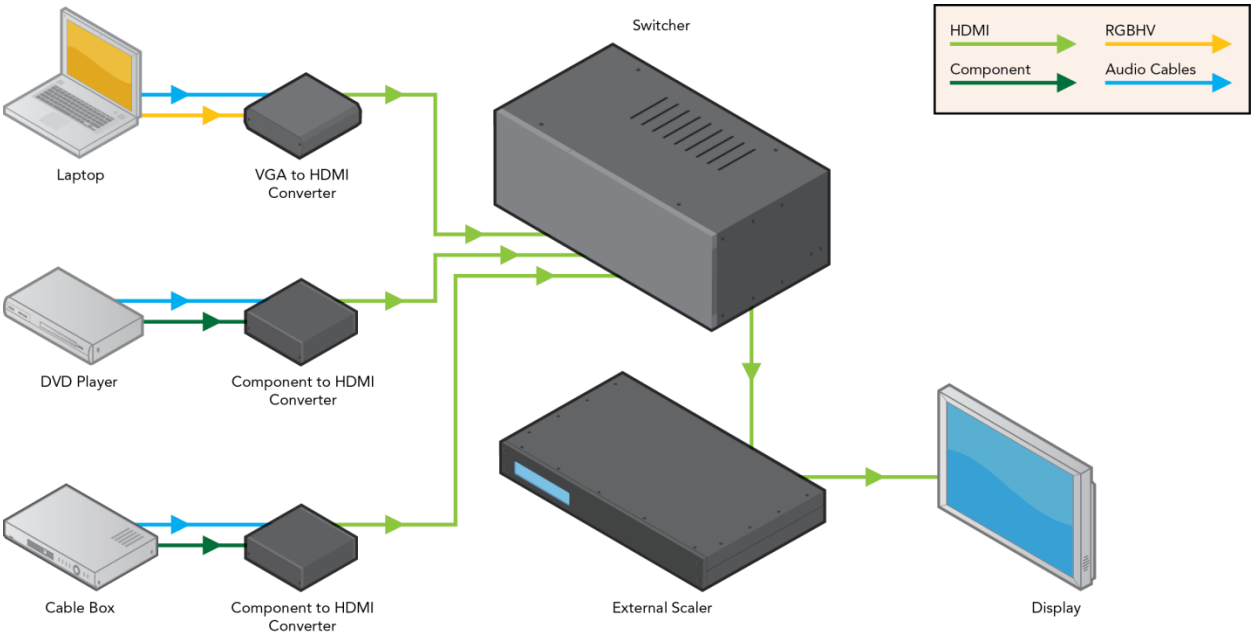

PC Monitor
1280 x 720p 60Hz
720 x 480p 60Hz
Projector
1920 x 1080p 60Hz
1920 x 1080i 30Hz
1280 x 720p 60Hz
720 x 480p 60Hz
TV Screen
1920 x 1200 60Hz
1920 x 1080p 60Hz
1920 x 1080i 30Hz
1280 x 720p 60Hz
720 x 480p 60Hz
EDID Data Transfer
Blu-ray output best resolution possible
Blu-ray Player
1920 x 1080p 60Hz
1920 x 1080i 30Hz
1280 x 720p 60Hz
720 x 480p 60Hz
AMX Enova DVX-3150HD
All-In-One Presentation Switcher
EDID from DVX-3150HD
Scaled To Best Resolution
The 'Smart' in SmartScale means the picture is automatically scaled to match the display's best resolution with no manual setup.
RESULT: Each display shows content at its optimal resolution.

MULTI-FORMAT INPUTS

PROBLEM – MANAGING DISTRIBUTION OF ANALOG AND DIGITAL VIDEO SIGNALS

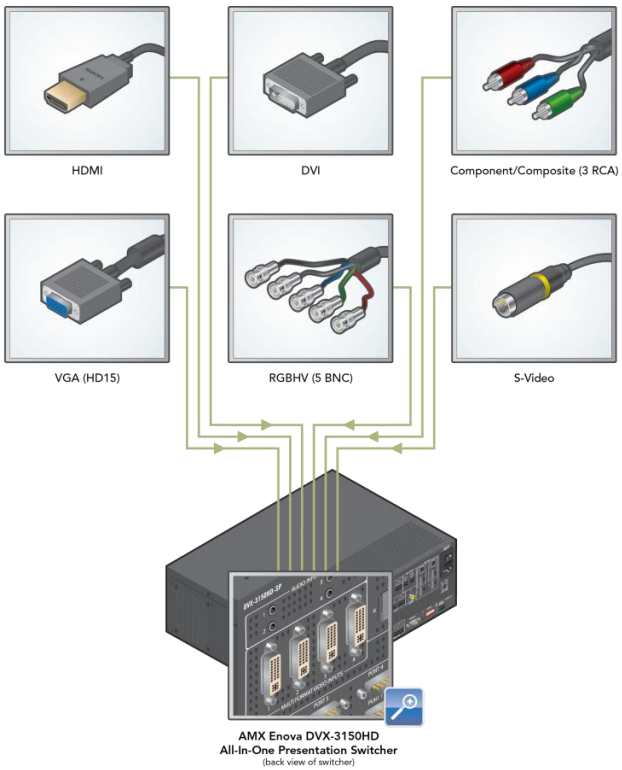
Most new AV integrations include a mix of digital sources, including HDMI/HDCP and legacy analog sources that output Composite, Component or RGBHV. Users typically upgrade these legacy sources later as upgrading all analog sources at once can be expensive and in many situations not practical. Until now, integrators were forced to manage analog and digital video signals separately with independent switching and distribution systems. Alternatively, scalers could be purchased to digitize each analog input device prior to entering the distribution platform. Both methods ultimately result in a more costly, less scalable solution as source devices change over time.

NON-AMX SOLUTION – MUST USE SEPARATE EQUIPMENT TO CONVERT ANALOG TO DIGITAL

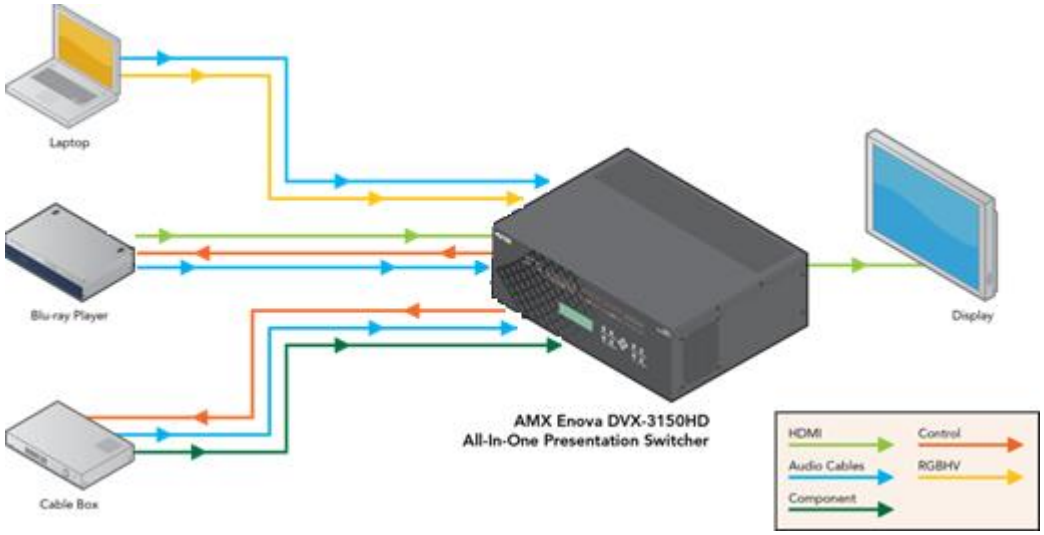


AMX SOLUTION – PROVIDES AUTOMATIC ANALOG TO DIGITAL CONVERSION

AMX has solved this problem with a solution that eases the transition from analog to digital by automatically accepting analog and digital signals on the same connector. Through the use of break-out cables, the DVX's multi-format video ports give the user the flexibility to support legacy analog signals such as Composite, S-Video, Component and RGBHV and digital signals like DVI or HDMI/HDCP.



Analog signals brought into the system through the multi-format video inputs are automatically converted to digital signals. This process eliminates the need for costly external converters that increase failure points. The DVX's multi-format video inputs provide a robust solution for analog sources and provide a ready-to-go upgrade solution when analog sources are replaced with digital sources in the future.



AUDIO BREAKAWAY AND EMBEDDING

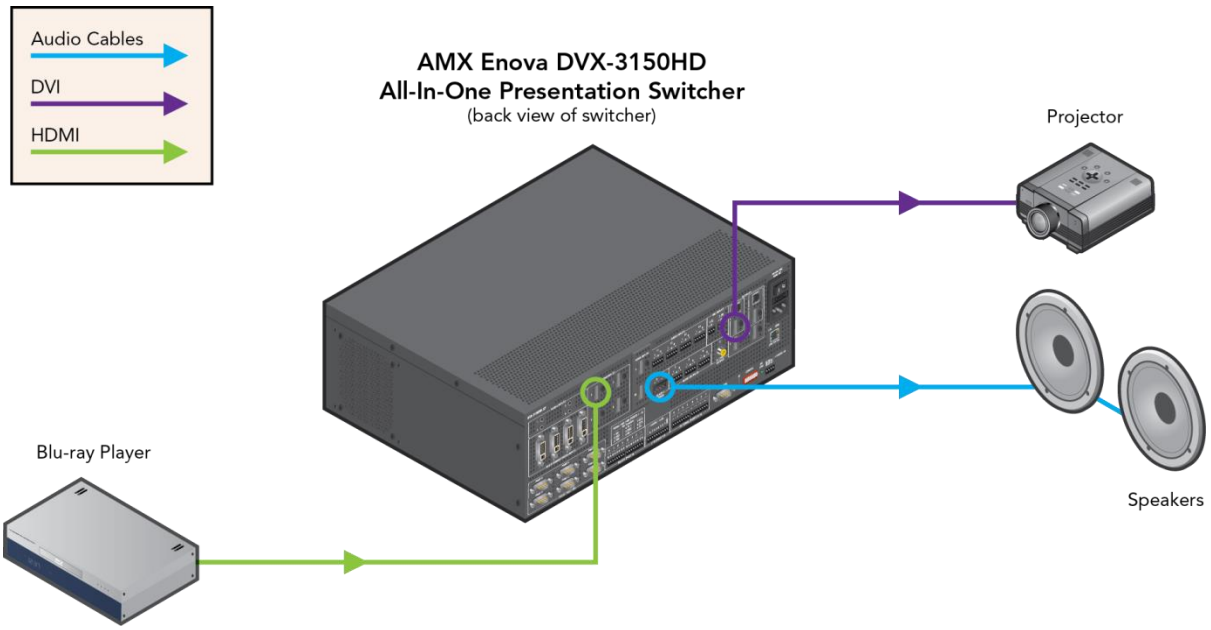
PROBLEM – ACCESSING EMBEDDED AUDIO ON HDMI

HDMI inputs integrate audio and video into the same cable. Unfortunately, embedded audio provides an added layer of difficulty when dealing with most installations. Because audio is embedded within the video stream, there is no way to access the audio directly for use in other locations than where the displays are located. Additionally problematic is the need to integrate audio over a digital input which doesn't yet have embedded audio (DVI from a computer) and must be routed through the common distribution system. Both issues have traditionally required extra converters, extractors and embedding devices which involve set-up, extra space and cabling hassles either before or after a centralized matrix switching system.

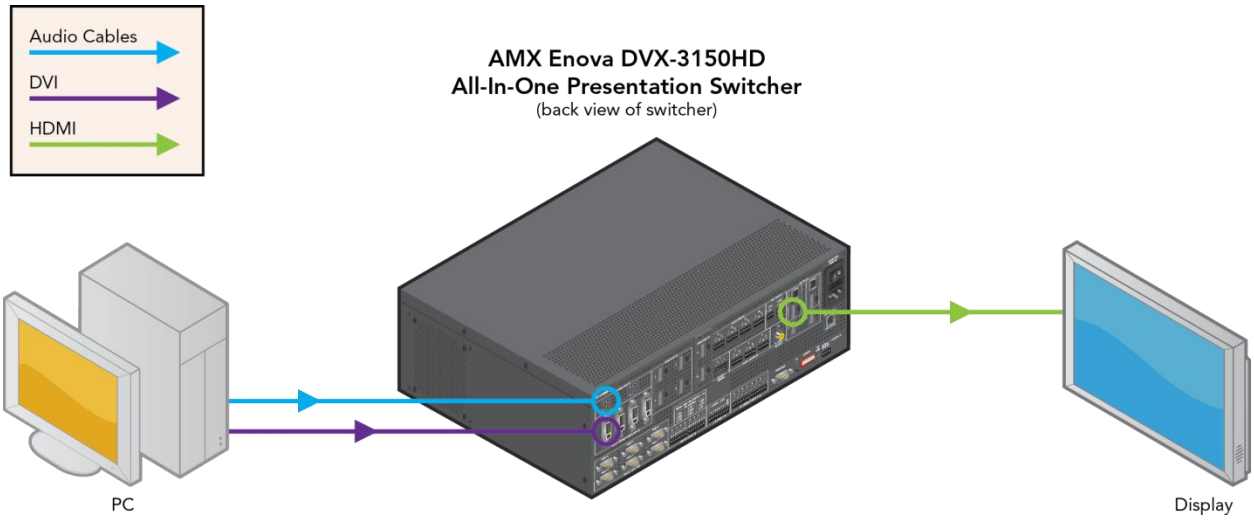
AMX SOLUTION – DVX FEATURES AUDIO BREAKAWAY AND AUDIO EMBEDDING

These issues have been eliminated with the Enova DVX. The audio de-embedding feature of the DVX allows digital stereo audio to be extracted from any HDMI input and processed through the DSP's gain adjustment, microphone mixer and equalizer. This processed audio can then be sent to any analog output, independent of the video routing of the original HDMI source. Any analog or digital audio source can also be embedded into the digital output of any HDMI output and/or sent to the S/PDIF output. This means that audio from one HDMI input and video from a second HDMI input could be combined and sent to any HDMI output.

DE-EMBEDDING HDMI AUDIO AND SENDING OUT ANALOG AUDIO OUTPUT



EMBEDDING AUDIO TO AN HDMI OUTPUT



This solution greatly increases the usability and access of embedded audio without requiring extra audio strippers/extractors either before or after the matrix switcher.

DXLINK - TWISTED PAIR DISTRIBUTION

PROBLEM – HDMI SIGNALS CANNOT TRAVEL LONG DISTANCES

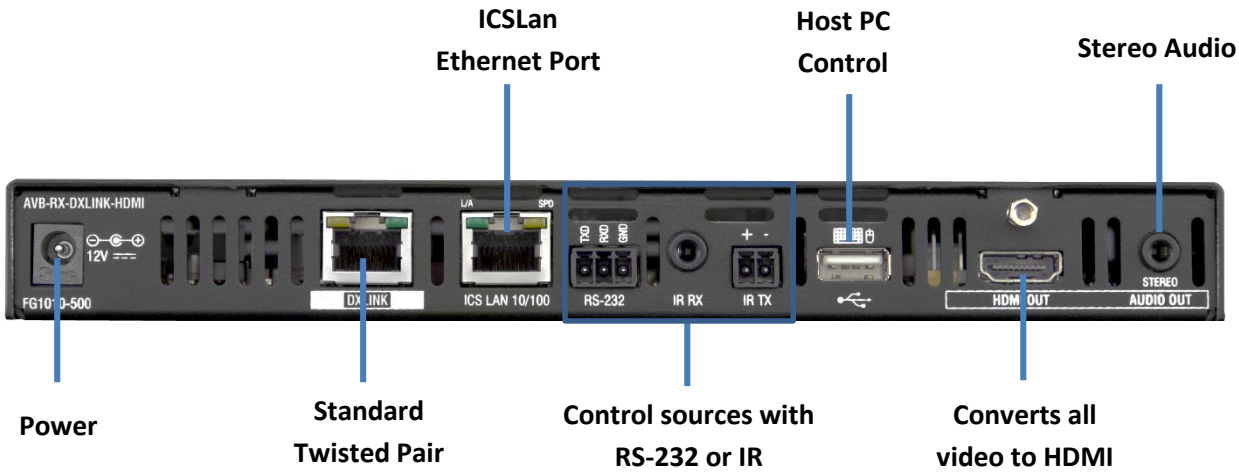
Because HDMI and DVI signals have high data rates, sending them further than 15m (45 feet) can result in signal dropout and failure. With most AV applications requiring greater distances of signal travel, an alternative solution is required. There are many category cable solutions available on the market designed to extend this distance, but they are often limited to 30 – 60m (100 - 200 feet) at full resolutions of 1920x1080 and require two category cables. Using these in combinations with a presentation switcher typically results in unruly cabling, unnecessary rack space and additional set-up time. Additionally, many transport solutions consume extra HDCP keys, further limiting the distribution capability of HDMI with HDCP signals and generally do not work well with other matrix switching devices.

AMX SOLUTION – DXLINK TECHNOLOGY SENDS AV SIGNALS UP TO 100M

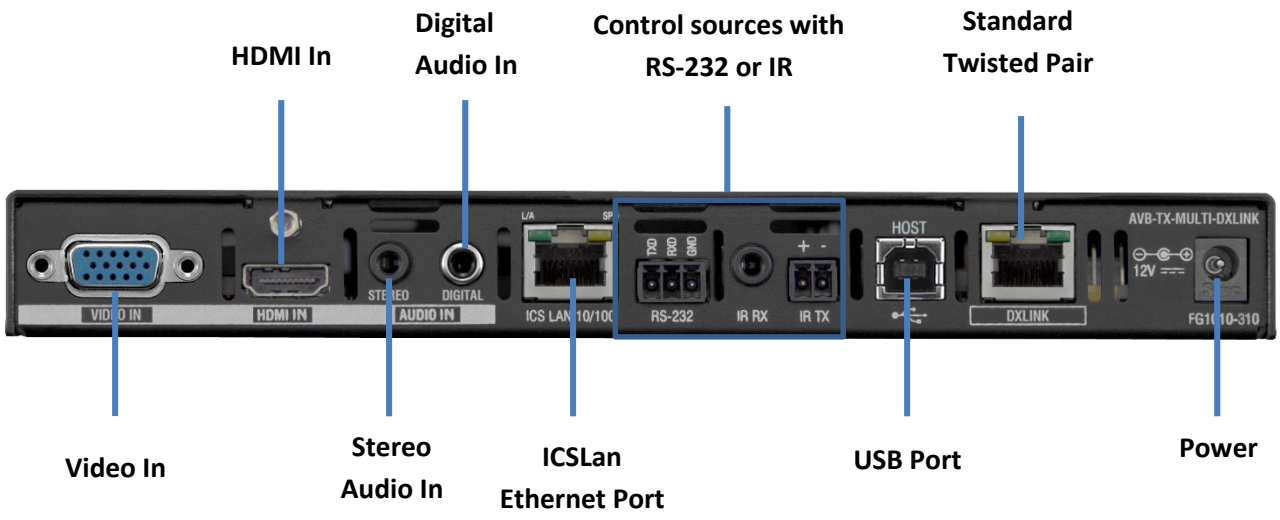
With Enova DXLink outputs on the DVX, and DXLink Receivers, these issues are solved. Designed to operate on one standard good quality (250 MHz or better rating) twisted pair cable, DXLink can pass full resolution 1920x1200 at 60 Hz video, deep color video and 2K resolutions for distances of up to 100m (330 feet). DXLink technology provides a clean, simple to use and quickly deployable method for overcoming digital signal distance transport issues.

The same single twisted pair cable also passes NetLinx bi-directional control, Ethernet from the embedded switch (including IP video capabilities) and USB keyboard and mouse control (USB keyboard and mouse control not currently supported on DVX). Running all of this over a single cable simplifies the design and installation process by eliminating the need for separate control wires and reducing the number of required network drops.

DXLINK TWISTED PAIR RECEIVER



DXLINK TWISTED PAIR TRANSMITTER



DIGITAL SIGNAL PROCESSING

PROBLEM – ROOM ACOUSTICS CREATE POOR AUDIO QUALITY

Most classrooms, conference rooms and auditoriums were not designed with acoustics in mind. They have hard parallel walls that cause the audio to reflect and create echoes, windows that reflect high frequencies and curtains and/or plush seating that can soak up bass frequencies.

AMX SOLUTION – BUILT IN DIGITAL SIGNAL PROCESSOR PROVIDES CLEAR AUDIO

The DVX features a built-in professional grade audio digital signal processors (DSP) capable of 2.6G-Flops – enough processing power to hand multiple simultaneous audio channels with no loss of fidelity. The DSP features 24-bit, 48-KHz sampling throughout for ultra-wide dynamic range and minimal noise.

The fully customizable, 10-band parametric EQ allows the system to compensate for less than ideal room acoustics. The center frequency of any band can be adjusted to counteract resonance or nulls that result from standing waves. Filter choices for each band include parabolic, low-pass, high-pass, band-pass, band-stop, treble-shelf and bass-shelf. With these tools, the installer can eliminate the negative audio impacts of room dimensions and furnishings, providing pleasantly clear audio that's never grating or tiring.

DVX WEB GUI USED TO ADJUST AUDIO SETTING

MICROPHONE PROCESSING

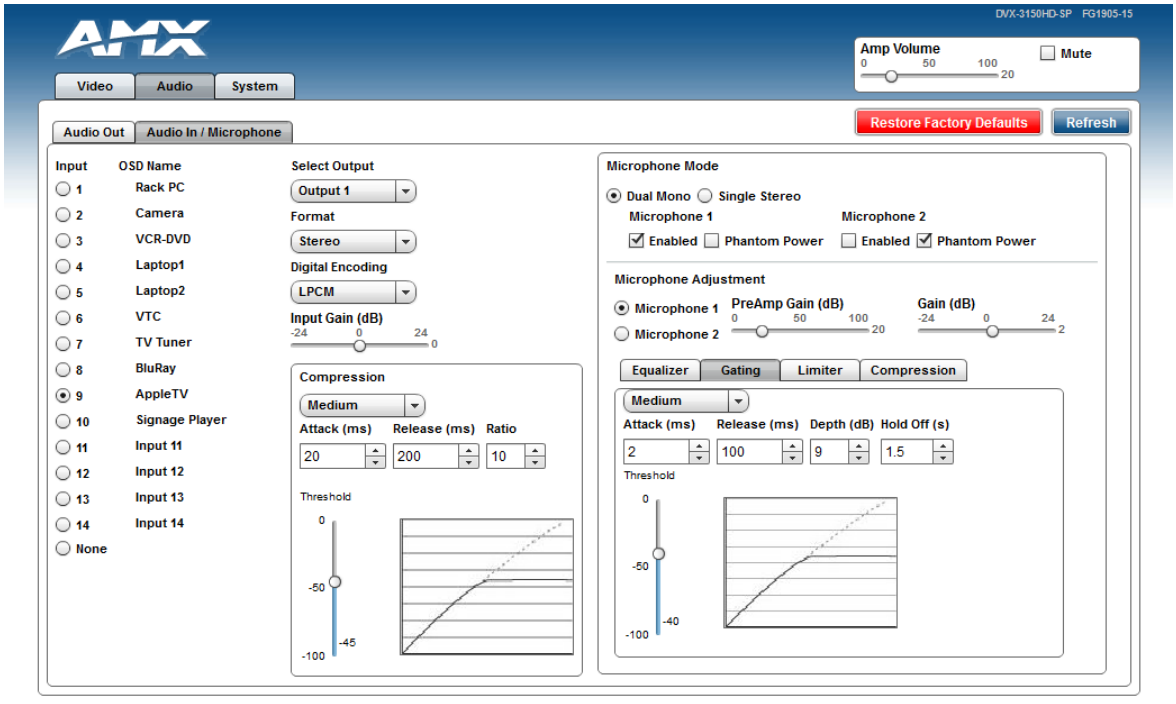
PROBLEM – MICROPHONE AMPLIFIES UNWAWNTED AND DISTRACTING SOUNDS

Microphones are used during presentations to amplify the presenter's voice. Unfortunately, unwanted sounds like hisses and buzzes from the room can creep in and be amplified, distracting the audience. These noises can not only be annoying, but they can undermine knowledge transfer and impact the effectiveness of a meeting.

AMX SOLUTION – MICROPHONE PROCESSING AMPLIFIES ONLY THE SOUNDS YOU WANT TO HEAR

The DVX solves this problem with the extensive microphone processing features of the integrated audio DSP. Each microphone input features fully-adjustable compression, gating, limiting and a 3-band parametric EQ. Microphone gating attenuates the microphone signal when the user isn't talking so that distractions like nearby conversations or background noise from a computer fan aren't continuously amplified through the system. The microphone limiter helps protect speakers from loud transients like a dropped microphone. The 3-band parametric equalizer allows the system to compensate for microphones with poor frequency response or for the acoustic impact of poor microphone placement. For example, it can help reduce noise like hums from mechanical equipment or accidental bumps on lectern microphones.

The DVX also supports independent microphone ducking on each audio output. With ducking enabled, the volume level of the source (or program) audio is automatically reduced anytime there is a sufficient signal on the selected microphone. This allows the presenter to easily talk over source audio without having to shout or constantly adjust audio levels.



AUTOMATIC STANDBY MODE

PROBLEM – AV EQUIPMENT CONSUMES MASSIVE AMOUNTS OF POWER

In typical installation with a standard rack of equipment consisting of a controller, AV switcher, amplifier and DSP, the system consumes approximately 400 to 500 watts. Not only do these racks require an abundant amount of electricity, but much of that power is lost in the form of heat. Too much heat from the AV equipment can lead to even more power consumption as it can increase the room's air conditioning needs and create additional costs. As interest in energy efficient AV solutions grows, users are becoming more conscientious of their energy habits and are looking for alternative solutions that require less energy.

AMX SOLUTION – DVX CONSUMES 1/5TH THE ENERGY OF TRADITIONAL RACKS WHEN ACTIVE

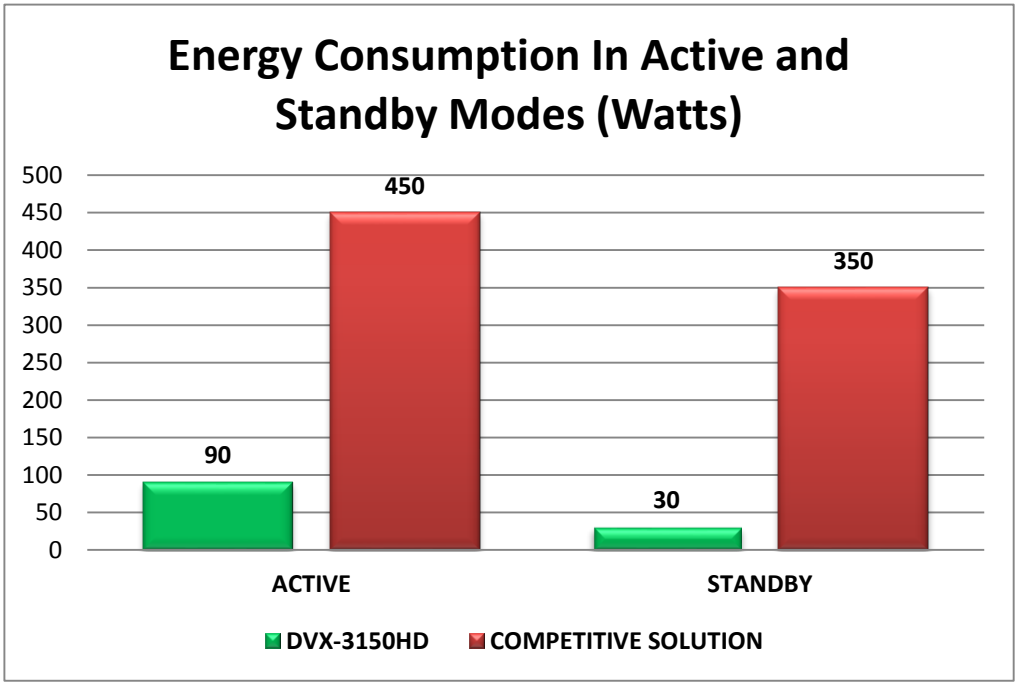
The DVX gives you an energy efficient solution that will exceed your customer expectations. The DVX consumes ~90 watts when active, roughly 1/5th the energy when compared to a standard rack of equipment.

PROBLEM – AV EQUIPMENT CONSUMES MASSIVE AMOUNTS OF POWER EVEN WHEN NOT IN USE

During a typical day of classes or back-to-back meetings, AV equipment may be used for four to eight hours a day. The rest of the time the equipment is in a standby mode. During this time, a traditional rack draws virtually the same amount of energy 300 – 400 watts compared to when it is active.

AMX SOLUTION – DVX CONSUMES 1/10TH THE ENERGY OF TRADITIONAL RACKS IN STANDBY MODE

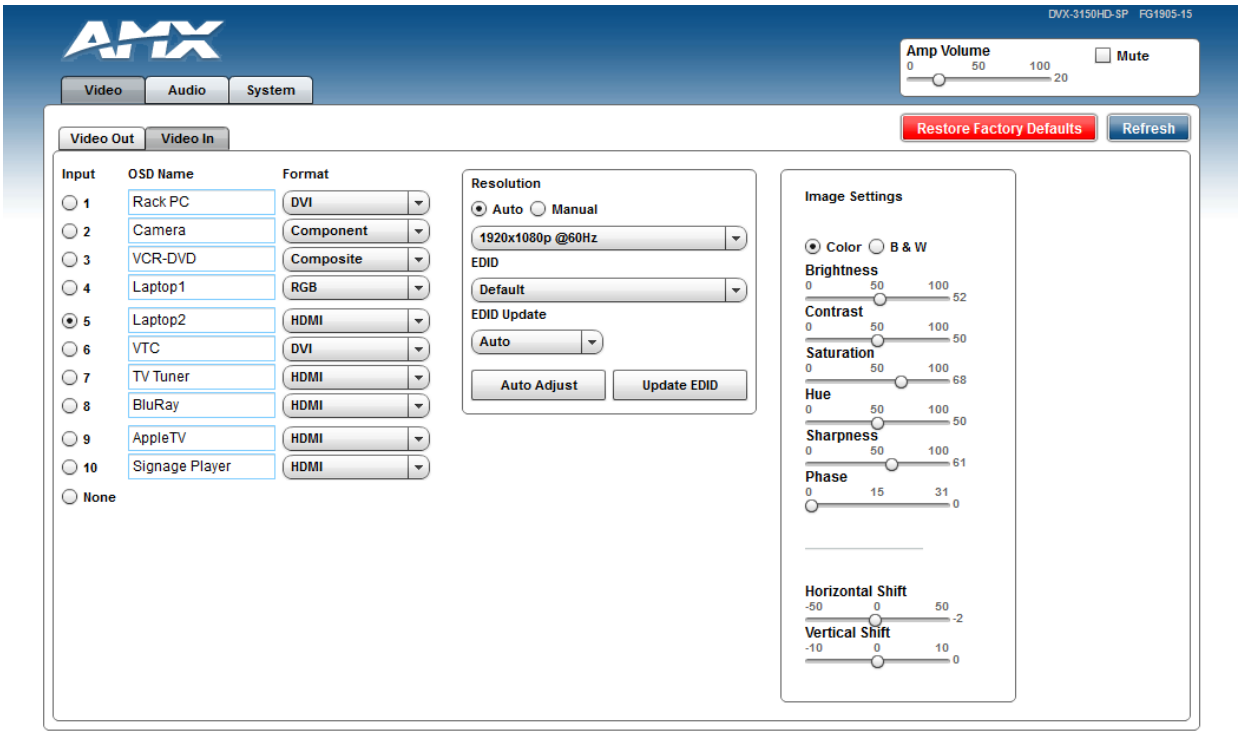
The DVX aims to save electricity by providing a convenient method to power down all audio and video circuitry when not in use. The DVX consumes ~30 watts in standby mode – 1/10th the energy that a typical rack consumes.



WEB GUI FOR AUDIO AND VIDEO CONFIGURATION

There are three methods for adjusting audio and video parameters of the DVX. All parameters can be modified in NetLinx code, which allows consistent initialization and on-the-fly changes. Additionally, most settings can be adjusted from the convenient Front Panel menu, which is useful for minor adjustments and doesn't require an external PC. The most user-friendly method is the integrated Graphical User Interface (GUI), available through the Master's Web console.

The GUI provides drop-down menus, sliders, selection boxes and text-entry fields for all major configuration elements of the system, including DSP parameter graphs to help visualize the effects of various adjustments. The GUI also provides a method for switching any audio or video input to any output, from a single, convenient page. The user interface is intuitively laid out and simple to navigate with individual tabs for video and audio functions and sub-tabs for input and output configurations. There's even the ability to call up video test patterns and audio test tones to help test connections to displays and speakers.



FEATURE SUMMARY

FEATURE	DESCRIPTION	BENEFIT
All-In-One Presentation Switcher in a 3RU Box	Combines a controller, AV matrix switcher, scaler, analog to digital signal converter, twisted pair transmitter and amplifier with built-in professional grade audio processing into a single compact unit	Eliminates the need for numerous standalone devices, dramatically simplifying integration and reducing programming time from weeks to hours.
SmartScale Technology	Automatically responds to the display's declared EDID information and scales the video to the best resolution and video parameters for that display without manual setup.	Display optimal resolution on every display with no image degradation in applications with mixed resolution
InstaGate Pro Technology	Allows traditionally key limited sources to be freely switched to any HDCP compliant display without the typical HDCP delays.	Easily integrate HDCP into system designs and enjoy hassle-free matrix switching to any HDCP compliant displays; no tools, no delays, and no key constraints – it just works
Multi-Format Ports	Support for analog signals - RGBHV, Component, S-Video, and Composite, and digital HDMI/HDCP and DVI signals - all on the same connector	Flexible, adaptable and right-sized for almost any application. Can easily handle last minute changes and equipment replacements with different signal types.
Built-in Professional Grade Audio DSP	Four independently switched and processed audio paths provide four unique volume, EQ, ducking and mixing configurations	Eliminate the negative audio impacts of room dimensions and furnishings, providing a perfectly tuned audio
3D and Surround Sound	Pass through latest video formats including 3D and Deep Color and pass through high definition surround sound including DTS-HD and Dolby TrueHD	Provides flexibility and future proofs the customer for the latest audio and video
Audio Breakaway	Stereo audio from any analog input or de-embedded audio from any HDMI input can be broken away from its associated video, processed through the DSP, and switched independently to any analog, HDMI or S/PDIF audio output	Route audio to any display independent of its corresponding video
Enhanced Microphone Processing	Independent 3-band parametric EQ, compression, gating, auto-ducking, and limiting on each microphone input	Ensures crystal clear communication
DXLink Category Cable Inputs & Outputs	Send & receive audio, video, bi-directional control and Ethernet to remote destinations up to 100m away over standard twisted pair cable	Simplified wiring infrastructure that reduces cost and labor. Overcomes high definition cable limitations.
Audio Matrix Switching	14x4(+7) audio matrix switcher. Audio inputs include eight analog and six digital inputs on HDMI. Four independent outputs include 1 amplified and 3 line level. Digital outputs (4 HDMI, 2 DXLink, 1 S/PDIF) can follow any analog audio output	Easily integrate audio with audio/video conferencing, induction loop systems, voice re-enforcement speakers and/or audio recording devices
Analog to Digital Video Conversion	Converts any incoming analog source to digital	Interconnect devices of mixed formats without adding cost of external converters or increasing failure points
Amplifier	Built in 2 x 25W into 8 Ohms Class D stereo amplifier or 75v – 70/100 v amplifier	Output processed and amplified audio directly to a pair of speakers
HDCP Compliant	Ensures display of content-protected media and interoperability with other HDCP-compliant devices	

All-In-One Presentation Switchers

10x4s

Includes 4 independent scaled HDMI outputs and 2 DXLink outputs (unpowered) that mirror two of the scaled HDMI outputs

DVX-3156HD-SP

10 Video Inputs: 2 Multi-Format DVI (HDMI/HDCP capable), 4 HDMI/HDCP, 4 DXLink, Amplifier: 2x25w - 8 Ohm

DVX-3156HD-SP

DVX-3156HD-T

10 Video Inputs: 2 Multi-Format DVI (HDMI/HDCP capable), 4 HDMI/HDCP, 4 DXLink, Amplifier: 75w - 70V/100V

DVX-3156HD-T

DVX-3155HD-SP

10 Video Inputs: 4 Multi-Format DVI (HDMI/HDCP capable), 4 HDMI/HDCP, 2 DXLink, Amplifier: 2x25w - 8 Ohm

DVX-3155HD-SP

DVX-3155HD-T

10 Video Inputs: 4 Multi-Format DVI (HDMI/HDCP capable), 4 HDMI/HDCP, 2 DXLink, Amplifier: 75w - 70V/100V

DVX-3155HD-T

DVX-3150HD-SP

10 Video Inputs: 4 Multi-Format DVI (HDMI/HDCP capable), 6 HDMI/HDCP, Amplifier: 2x25w - 8 Ohm

DVX-3150HD-SP

DVX-3150HD-T

10 Video Inputs: 4 Multi-Format DVI (HDMI/HDCP capable), 6 HDMI/HDCP, Amplifier: 75w - 70V/100V

DVX-3150HD-T

6x3s

Includes 2 independent, scaled HDMI outputs and 1 independent DXLink output with power

DVX-2150HD-SP

6 Video Inputs: 2 Multi-Format DVI (HDMI/HDCP capable), 4 HDMI/HDCP, Amplifier: 2x25w - 8 Ohm

DVX-2150HD-SP

DVX-2150HD-T

6 Video Inputs: 2 Multi-Format DVI (HDMI/HDCP capable), 4 HDMI/HDCP, Amplifier: 75w - 70V/100V

DVX-2150HD-T

DVX-2155HD-SP

6 Video Inputs: 2 Multi-Format DVI (HDMI/HDCP capable), 2 HDMI/HDCP, 2 DXLink, Amplifier: 2x25w - 8 Ohm

DVX-2155HD-SP

DVX-2155HD-T

6 Video Inputs: 2 Multi-Format DVI (HDMI/HDCP capable), 2 HDMI/HDCP, 2 DXLink, Amplifier: 75w - 70V/100V

DVX-2155HD-T

Switcher	Model	Amplifier	Multi-Format Inputs	HDMI Inputs	DXLink Inputs	Analog Audio Inputs	Scaled HDMI Outputs	DXLink Outputs	Analog Audio Outputs	Control Ports (Serial/IR/IO/Relay)
6x3	DVX-2150HD-SP	2x25w - 8 Ohm	2	4	0	4	2	1*	3	3/4/4/4
	DVX-2150HD-T	75w -70V/100V	2	4	0	4	2	1*	3	3/4/4/4
	DVX-2155HD-SP	2x25w - 8 Ohm	2	2	2	4	2	1*	3	3/4/4/4
	DVX-2155HD-T	75w -70V/100V	2	2	2	4	2	1*	3	3/4/4/4
10x4	DVX-3150HD-SP	2x25w - 8 Ohm	4	6	0	8	4	2**	4	6/8/8/8
	DVX-3150HD-T	75w -70V/100V	4	6	0	8	4	2**	4	6/8/8/8
	DVX-3155HD-SP	2x25w - 8 Ohm	4	4	2	8	4	2**	4	6/8/8/8
	DVX-3155HD-T	75w -70V/100V	4	4	2	8	4	2**	4	6/8/8/8
	DVX-3156HD-SP	2x25w - 8 Ohm	2	4	4	6	4	2**	4	6/8/8/8
	DVX-3156HD-T	75w -70V/100V	2	4	4	6	4	2**	4	6/8/8/8

* DVX-215x DXLink output is an independent, unscaled output with power. Scaling occurs at DXLink Receiver.
** DVX-315x DXLink outputs are unpowered, paired with an HDMI output & contain identical audio & video content & resolution as companion HDMI output.

enova DVX